

**PLANT 1 -**

Date of sample: 10/27/2011

Time of Sample: 12:30 pm

Sample: The sample was taken by Plant Operator from the fermentor sampling port of Fermentor 1 using standard sampling procedures.

Standard sampling procedure requires flashing sampling port two times with ~ 500 mL sample volume and then taking the sample (~500 mL)

Plating: Sample was plated immediately on YPD agar and counting was done after room temperature incubation for 2 days

**FERMENTOR COUNTS**

T:44.5	Dilutions	Counts	Cell concentration
R1	10-9		
R1	10-8		
R1	10-7		
R1	10-6		
R1	10-5		

**BEER COLUMN CONDITIONS**

Top temperature: 226 °F

Bottom temperature: 256 °F

Level at bottom 55%

Flowrate: 500 gpm

**BEER COLUMN SAMPLE**

Date of sample: 10/27/2011

Time of Sample:

Sample: The sample was taken by Plant Operator from the sampling port of the Beer Column using standard sampling procedures.

Plating: Sample was plated immediately on YPD agar and counting was done after room temperature incubation for 2 days

**WHOLE STILLAGE COUNTS (4 plates)**

	Dilutions	Counts
WS	0.5 mL Undiluted	

**PLANT 2 -****FERMENTOR SAMPLE**

Date of sample: 11/30/2011

Time of Sample: 10:30 am

Sample: The sample was taken by Plant Operator from the fermentor sampling port of Fermentor 1 using standard sampling procedures.

Standard sampling procedure requires flashing sampling port two times with ~ 500 mL sample volume and then taking the sample (~500 mL)

Plating: Sample was plated immediately on YPD agar and counting was done after room temperature incubation for 2 days

**FERMENTOR COUNTS**

Drop	Dilutions	Counts	Cell concentration
R1	10-9		
R1	10-8		
R1	10-7		
R1	10-6		
R1	10-5		

**BEER COLUMN CONDITIONS**

Top temperature: 164 °F

Bottom temperature: 190 °F

Level at bottom 35.4%

Flowrate: 1680 gpm

Minimum residence time: 2.2 mins

Average residence time at bottom of column: 6 mins

**BEER COLUMN SAMPLE**

Date of sample: 11/30/2011

Time of Sample: 2:30 pm (4hrs after drop)

Sample: The sample was taken by Plant Operator from the sampling port of the Beer Column using standard sampling procedures.

Plating: Sample was plated immediately on YPD agar and counting was done after room temperature incubation for 2 days

**WHOLE STILLAGE COUNTS (10 plates)**

	Dilutions	Counts
YPD	10 plates 0.5 mL Undiluted	

#### PLANT 3 - Y

Date of sample: 1/21/2012

Time of Sample: 20:38

Sample: The sample was taken by Plant Operator from the fermentor sampling port of Fermentor 1 using standard sampling procedures.

Standard sampling procedure requires flashing sampling port two times with ~ 500 mL sample volume and then taking the sample (~500 mL)

Plating: Sample were collected and stored at 4C.

Plating on YPD agar was done the second day morning and counting was done after 3 days incubation at room temperature

#### FERMENTOR COUNTS

Drop	Dilutions	Counts	Cell concentration
R1	10-9		
R1	10-8		
R1	10-7		
R1	10-6		
R1	10-5		

#### BEER COLUMN CONDITIONS

not noted but similar to plant 2

#### BEER COLUMN SAMPLE

Date of sample: 1/22/2012

Time of Sample: ~00:38

Sample: The sample was taken by Plant Operator using standard sampling procedures.

Plating: Sample were collected and stored at 4C.

Plating was done the second day morning and counting was done after 3 days incubation at room temperature

#### WHOLE STILLAGE COUNTS (10 plates)

BC	Dilutions	Counts
YPD	10 plates 0.5 mL Undiluted	